Max Beberman and the "New Math"

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Max Beberman, a University High School educator and University of Illinois professor, played a pivotal role in the development of a new math curriculum during the 1950s and the 1960s, and as a result, helped raise national standards in mathematics. He headed the University of Illinois Committee on School Mathematics that significantly altered math programs across the United States.

Beberman spent most of his career in Illinois. He was educated in Stuyvesant High School in New York and earned a bachelor's degree at CCNY, a master's degree at Rutgers, and a doctorate from Columbia University Teachers College. In 1950 at the age of 25, he moved Illinois where he spent the rest of his life. There, his talent was recognized immediately, and it was said that he could "teach math to a stone wall." He called his teaching style "discovery learning" because he encouraged his students to figure out why something worked.

Beberman's first step in changing the math curriculum was taken at the University of Illinois). A group of teachers and professors headed by Beberman investigated typical high school math programs and made observations and suggestions. This group, the University of Illinois Committee on School Mathematics (UICSM), was funded by the Carnegie Corporation and by the United States Office of Education. The University of Illinois also conducted the University of Illinois Arithmetic Project that focused on the mathematical education of children in grades one through six. The purpose of this study

was to determine whether schools were setting proper standards for students at an early age. A different group of professors conducted this project but used UICSM data.

Beberman recognized a need for more mathematicians during the 1950s and 1960s. Technological improvements were forcing mathematicians and scientists to obtain advanced training. In addition, computers were creating new jobs in industry, and many of these jobs required creative thinking in mathematics. If high schools were unable to adequately prepare students for college, few would be willing or able to pursue higher education. Ultimately, science and industry in America would suffer.

Advocates of Beberman's New Math believed that students learn by understanding *why* something is correct rather than by simply being told the right answer. In one experiment, researchers introduced quadratics to children in first grade, and found that the subjects gained deeper understanding by how the subject was taught. Students, moreover, retained this knowledge when proceeding to more advanced topics. Proponents of New Math also saw improvements in students who did not do well in math before.

After the Soviets launched *Sputnik* in 1957, Congress raised math standards. The American press thought the success of the *Sputnik* satellite reflected poorly on the quality of math and science education in American public schools. Congress subsequently passed the 1958 National Defense Education Act six years after Beberman's UICSM study. The National Science Foundation also provided millions of dollars for math education, which led to the creation of the Commission of Mathematics, the Regional Education Laboratories, and the National Institute of Education. The number of science, math, and foreign language majors increased as a result.

Max Beberman died in early 1971 at the age of 45, but his work is still remembered. In 1966, he had visited the Mayo clinic for a heart valve replacement, but failure of the valve led to his death in 1971. Robert Davis subsequently took over the UICSM and stressed the importance of the psychology of learning as well as logic and proofs in math education. [From David Klein, "A Brief History of American K-12 Mathematics Education." http://www.csun.edu/~vcmth00m/AHistory.html (Sept. 12, 2005); Ruth Moss, "The New Math." Chicago Daily Tribune 16 May 16, 1962; Ralph A. Raimi, "Chapter 1: Max," <http://www.math.rochester.edu/people/faculty/rarm/beberman.html>. (Aug. 30, 2005); Ralph A. Raimi, "Chronology," http://www.math.rochester.edu/people/faculty/rarm/chron.html (Sept. 9, 2005).]